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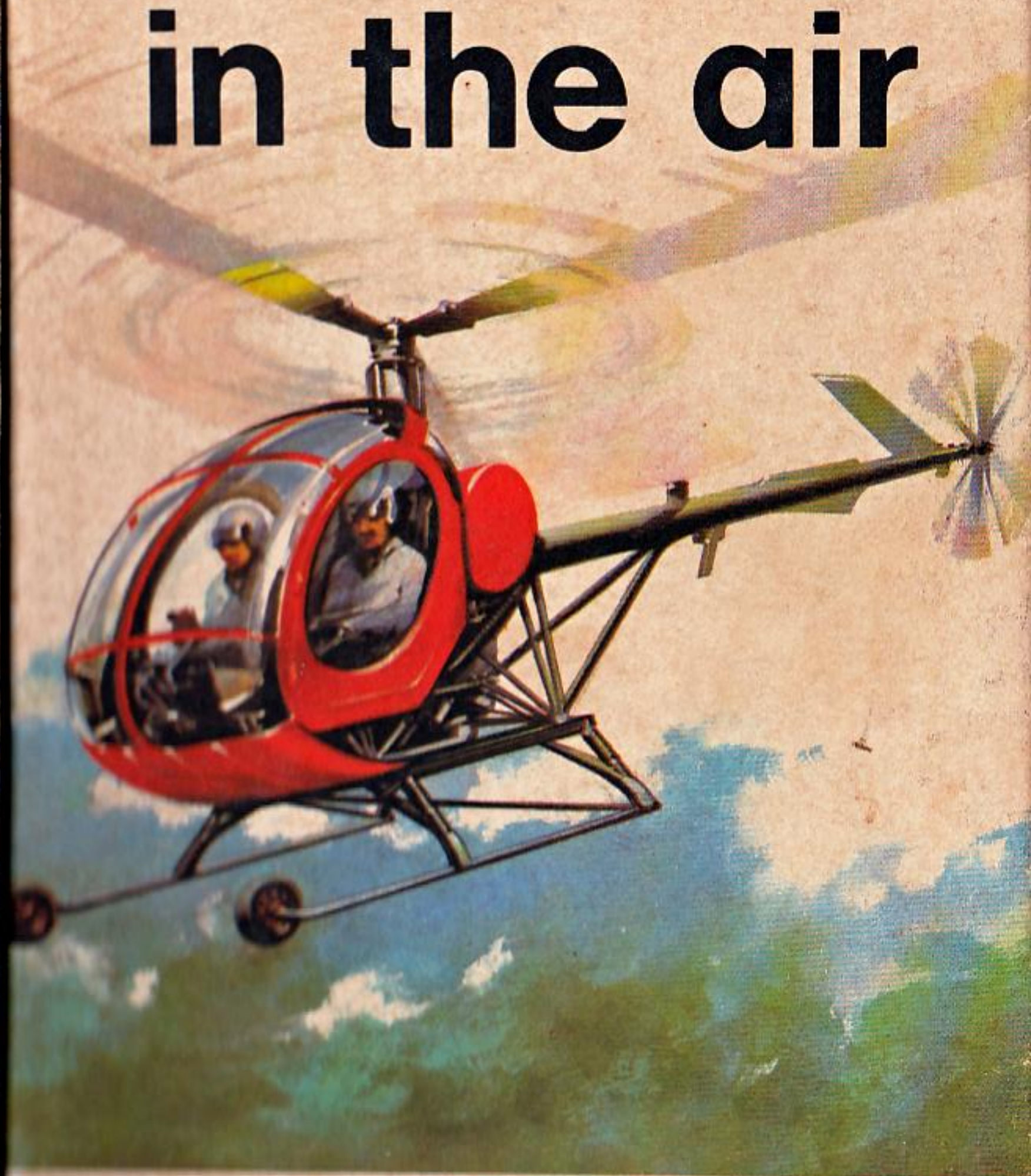
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man in the air

LADYBIRD LEADERS



# man in the air







## **to teachers and parents**

This is a LADYBIRD  
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A Ladybird Leader

# man in the air

Written by James Webster

Illustrated by Gerald Witcomb

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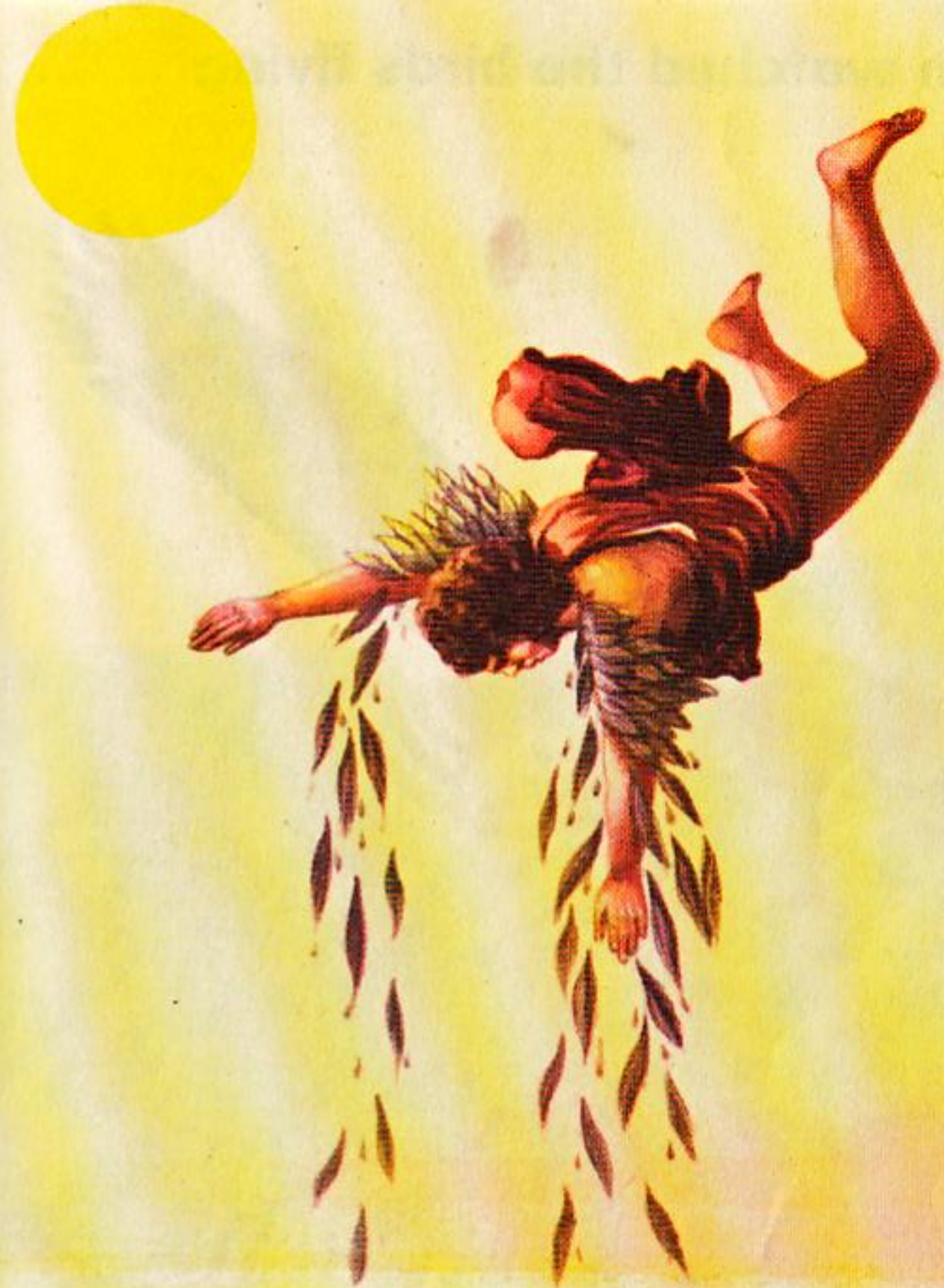
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## Men have always wanted to fly

An old Greek story tells of Icarus.  
He made wings of feathers and wax.  
The sun melted the wax and  
he fell into the sea.





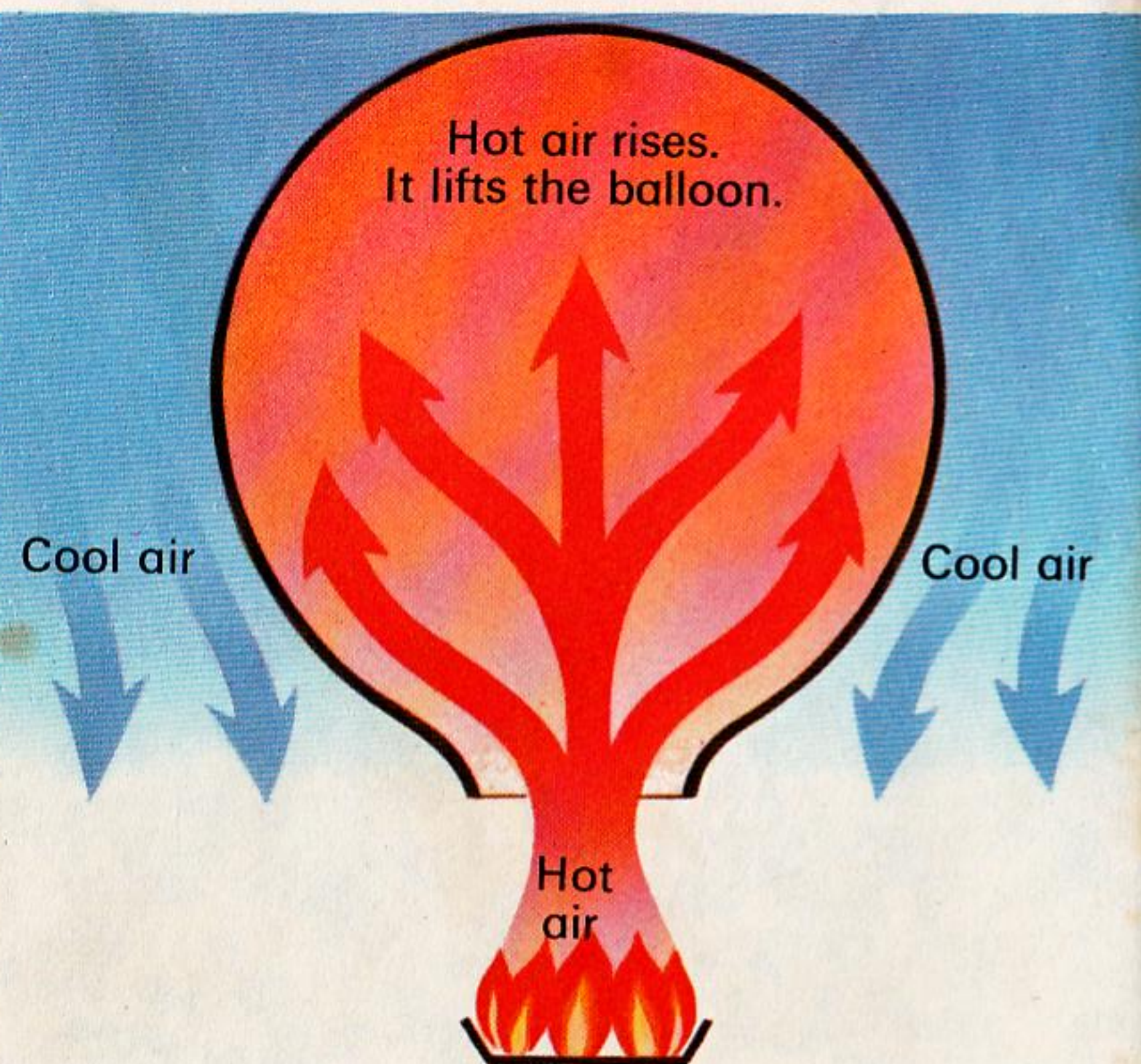
Men watched the birds flying



Men tried to make wings of their own.  
Early birdmen were very brave.  
They could not fly like birds.  
Often they hurt themselves.



## Hot air rises



Men found that hot air rises.  
They made a fire balloon.

## The first flight

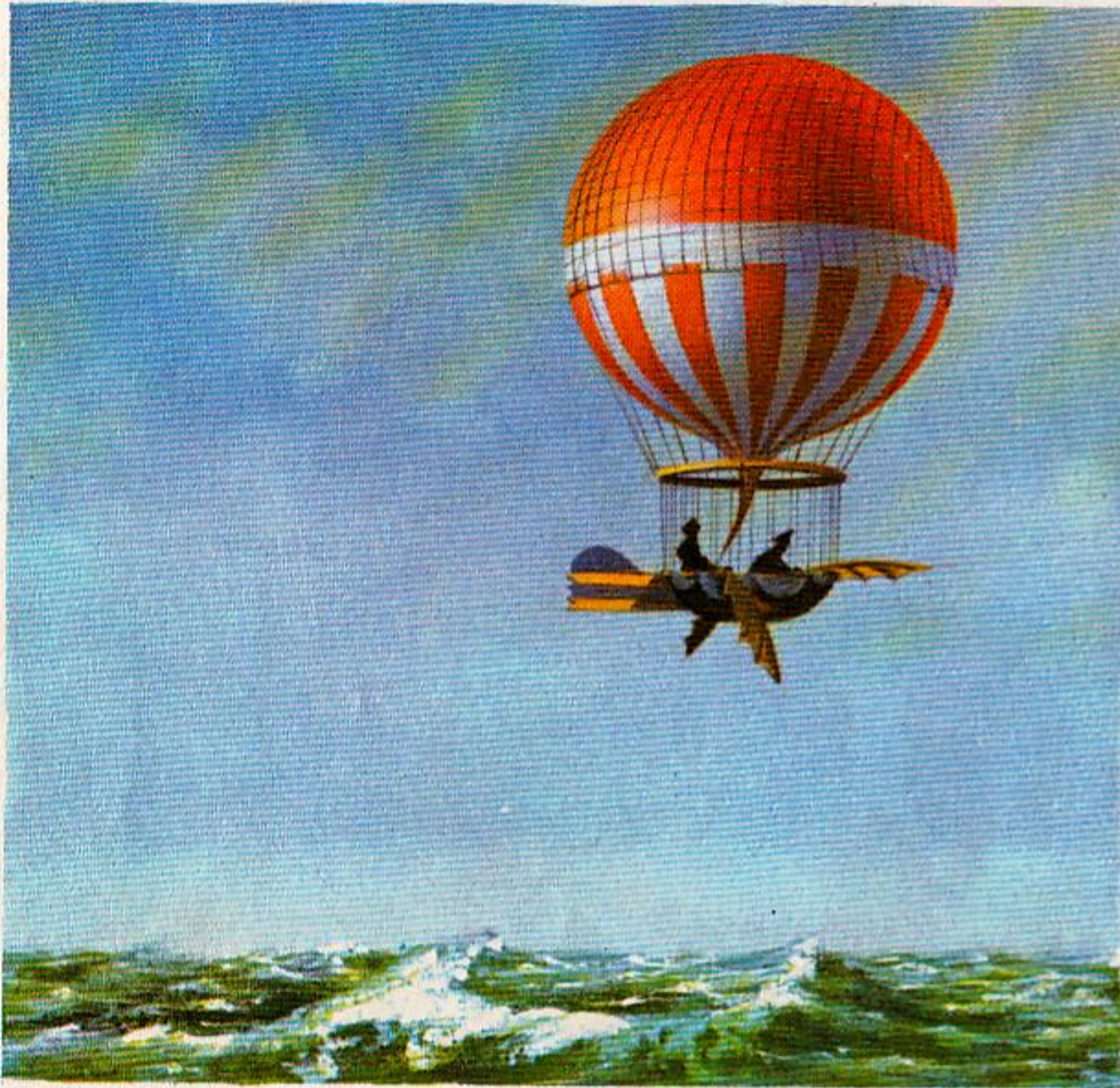


The Montgolfier balloon

Nearly two hundred years ago,  
two brothers, named Montgolfier,  
flew in this hot air balloon.



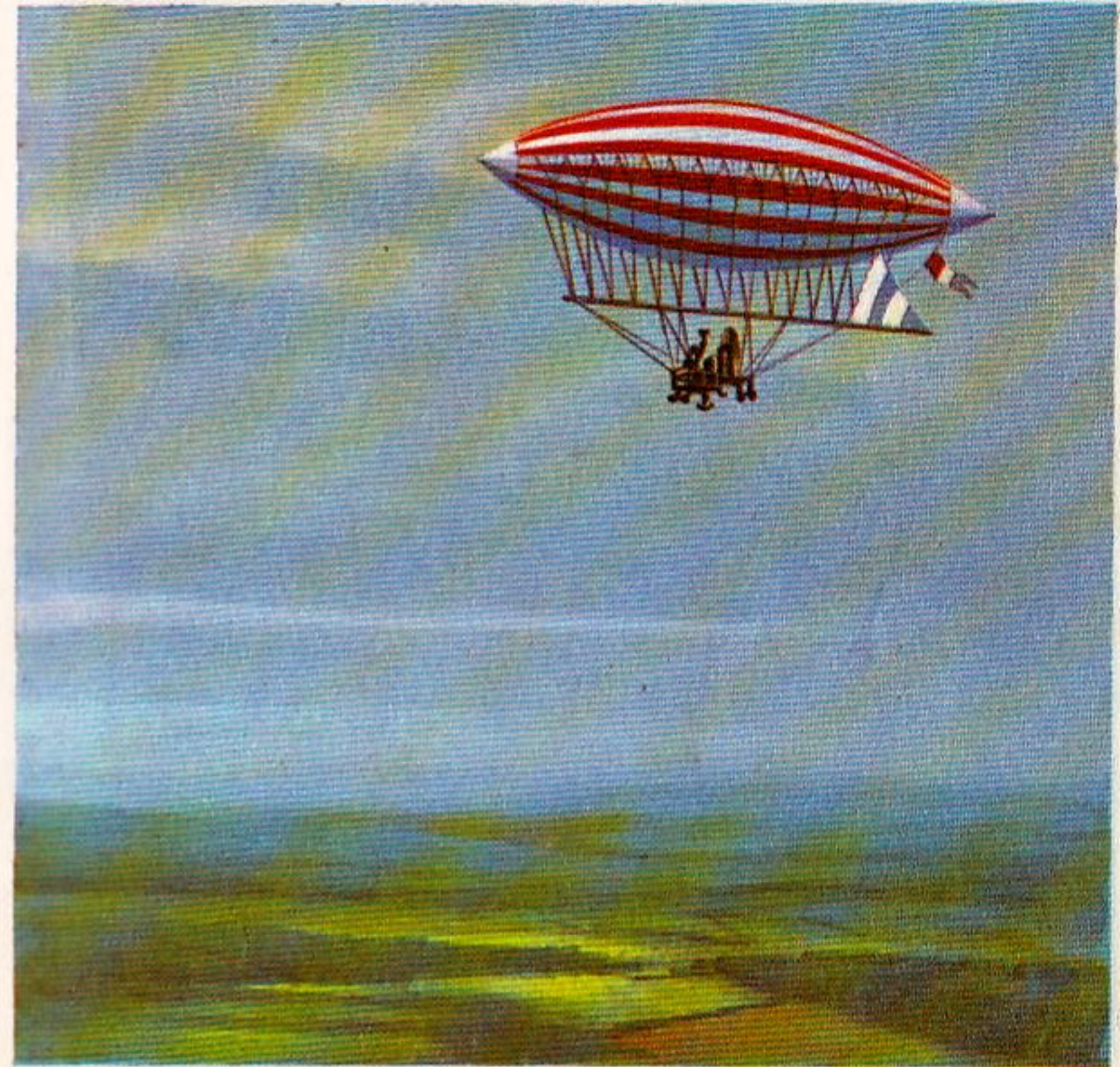
## Hydrogen gas also rises



Blanchard and Jeffries' balloon

Some balloons were filled with a gas called hydrogen.

A balloon filled with hydrogen crossed the English Channel.



Giffard's airship

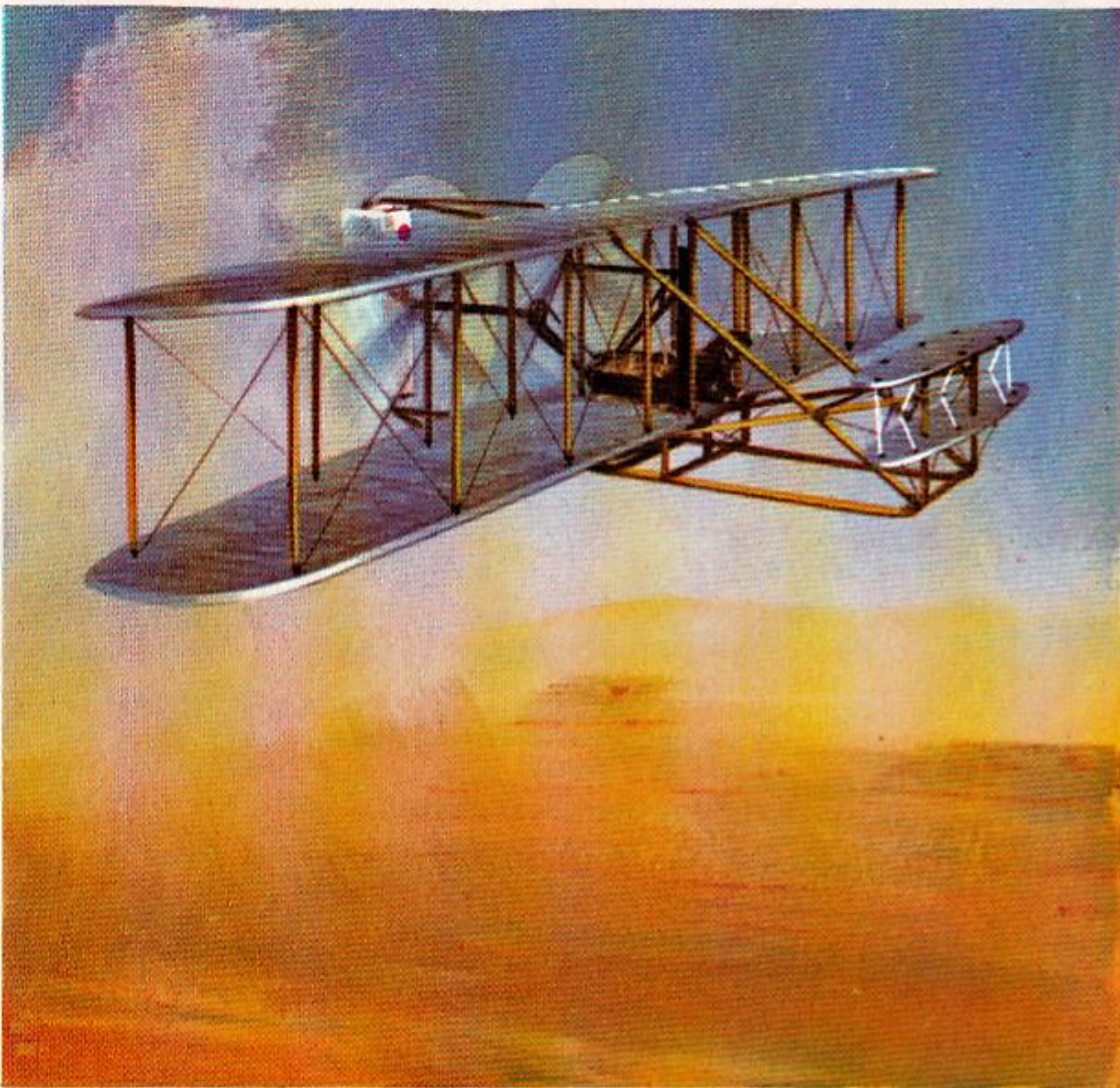
Balloons could not be steered.

Henry Giffard made a steam-driven airship.

This could be steered.



## The first aircraft to fly with an engine and propeller



In 1903, the brothers Wilbur and Orville Wright flew this aircraft in America.

They flew for 12 seconds.

Bleriot flew from France to England in 37 minutes.

This was the first aircraft to fly across the English Channel.





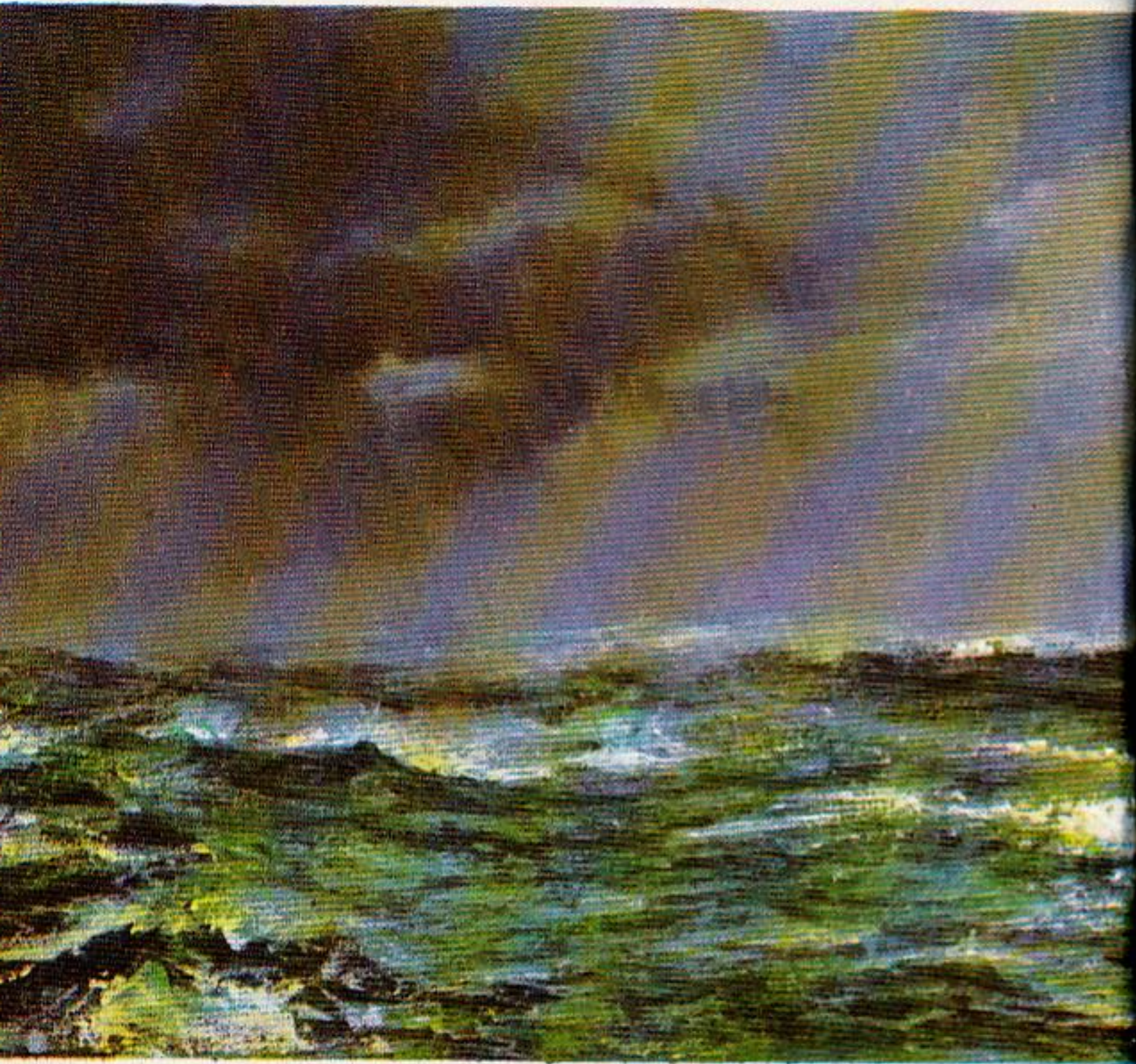
## Men fight in the air



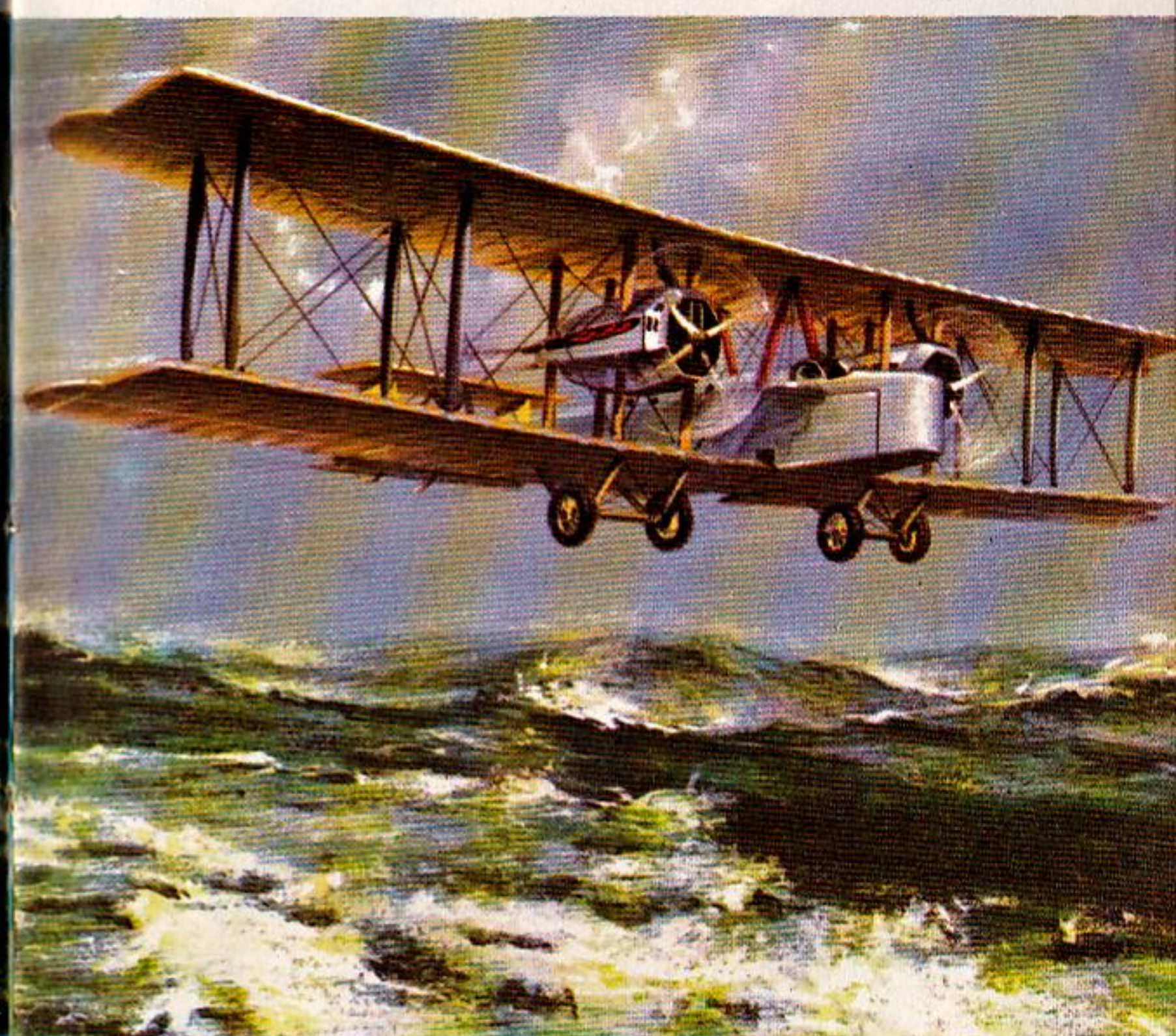
In the First World War, men fought in the air for the first time.



This was the first aircraft to fly across the Atlantic Ocean



About fifty years ago, Alcock and Brown flew this aircraft from Newfoundland to Ireland.

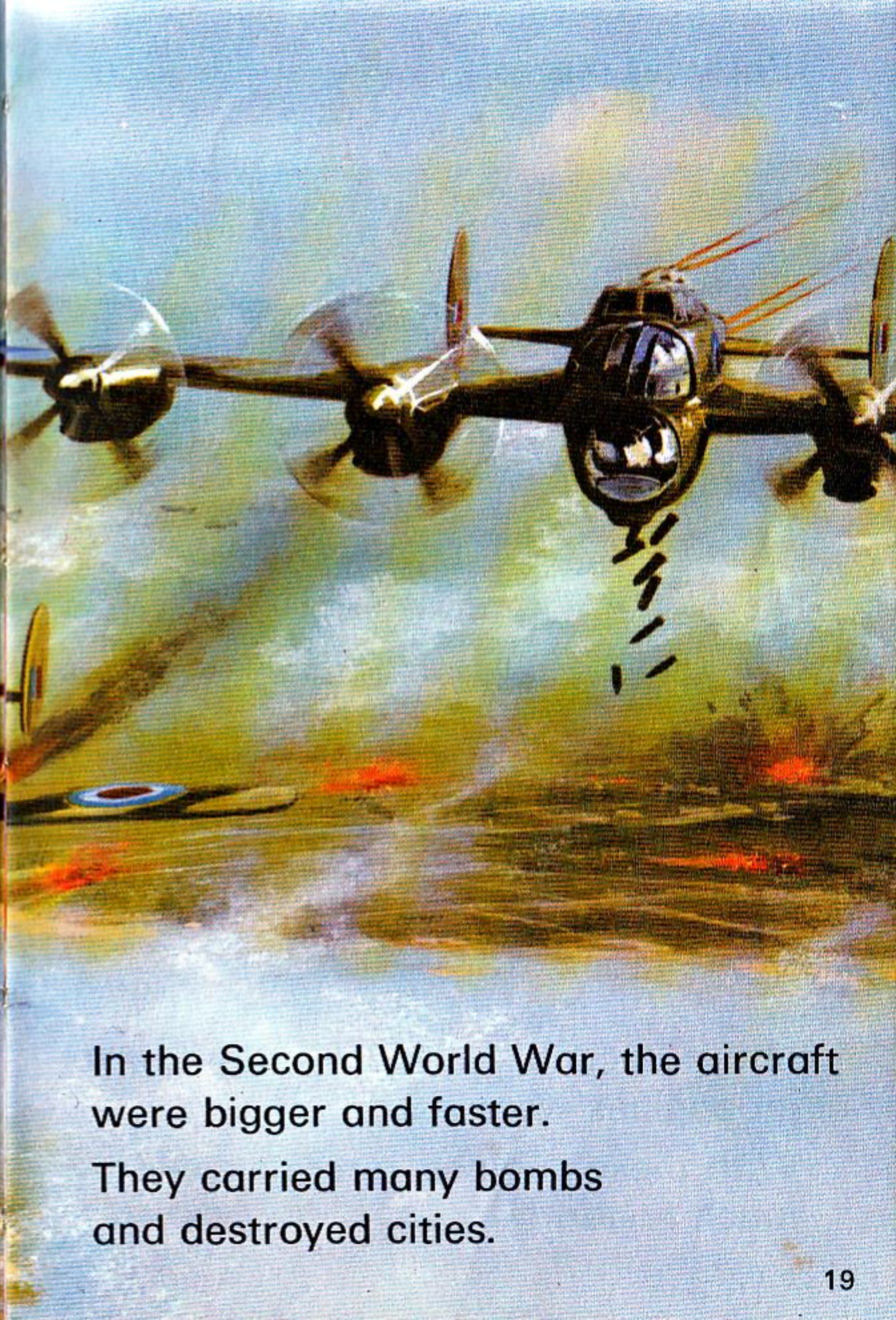


They flew at about 118 miles (190 km) an hour.

Today, aircraft cross the Atlantic at more than 600 miles (966 km) an hour.



## An air-raid in the Second World War

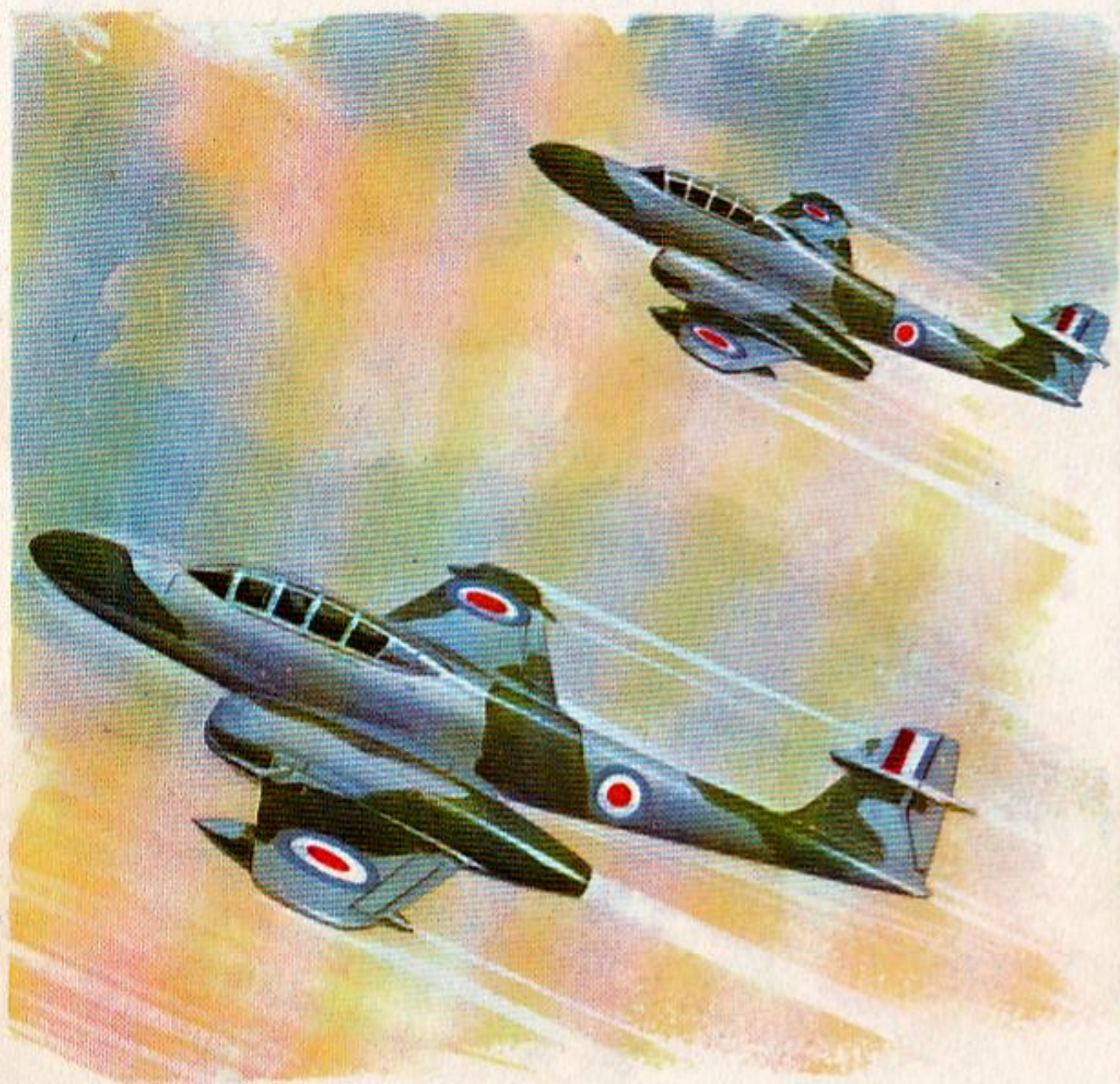


In the Second World War, the aircraft were bigger and faster.

They carried many bombs and destroyed cities.



## Early jet aircraft



In the Second World War, the first jet engines were used.

With these engines, aircraft could fly much faster.

*See what happens !*

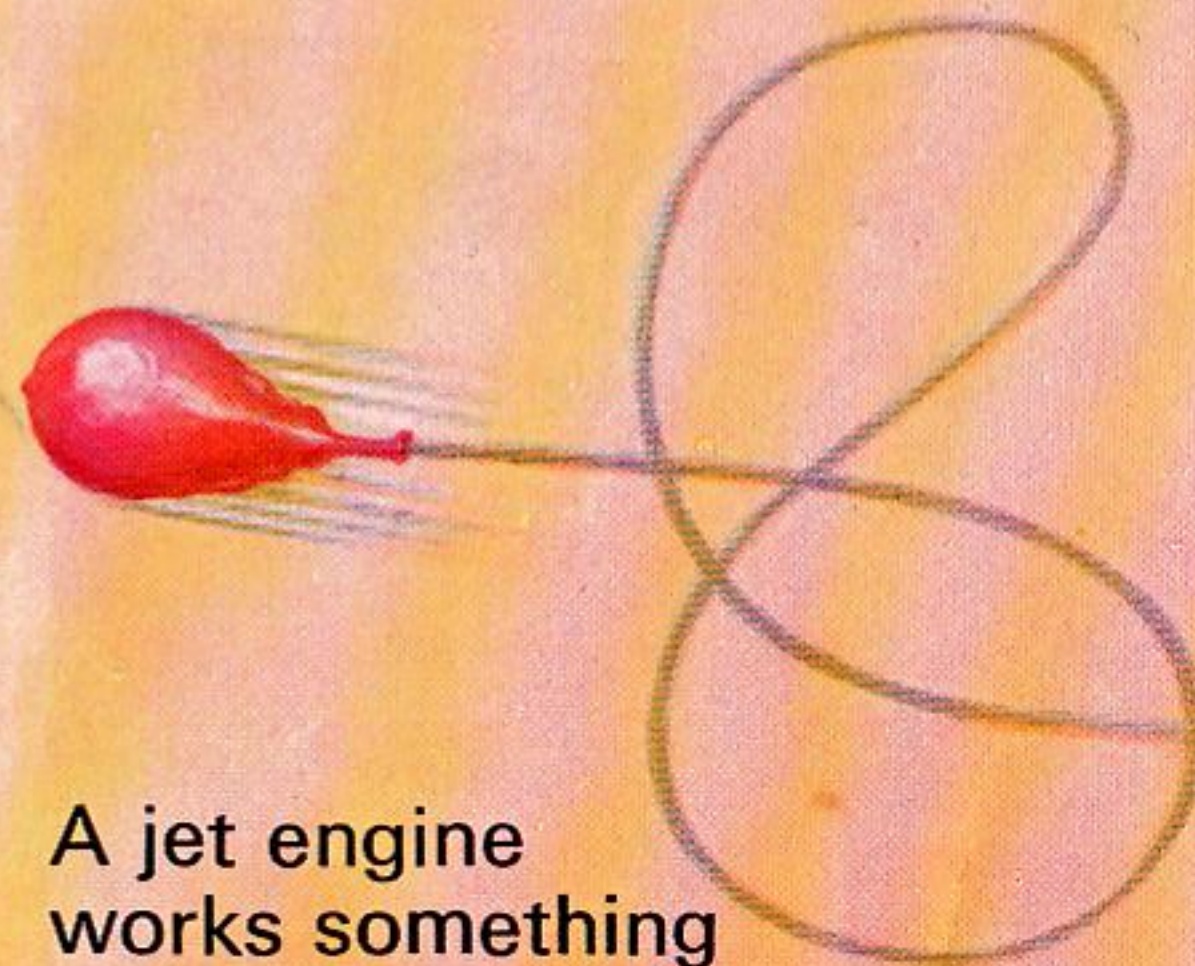


Blow up a balloon



Pinch its neck

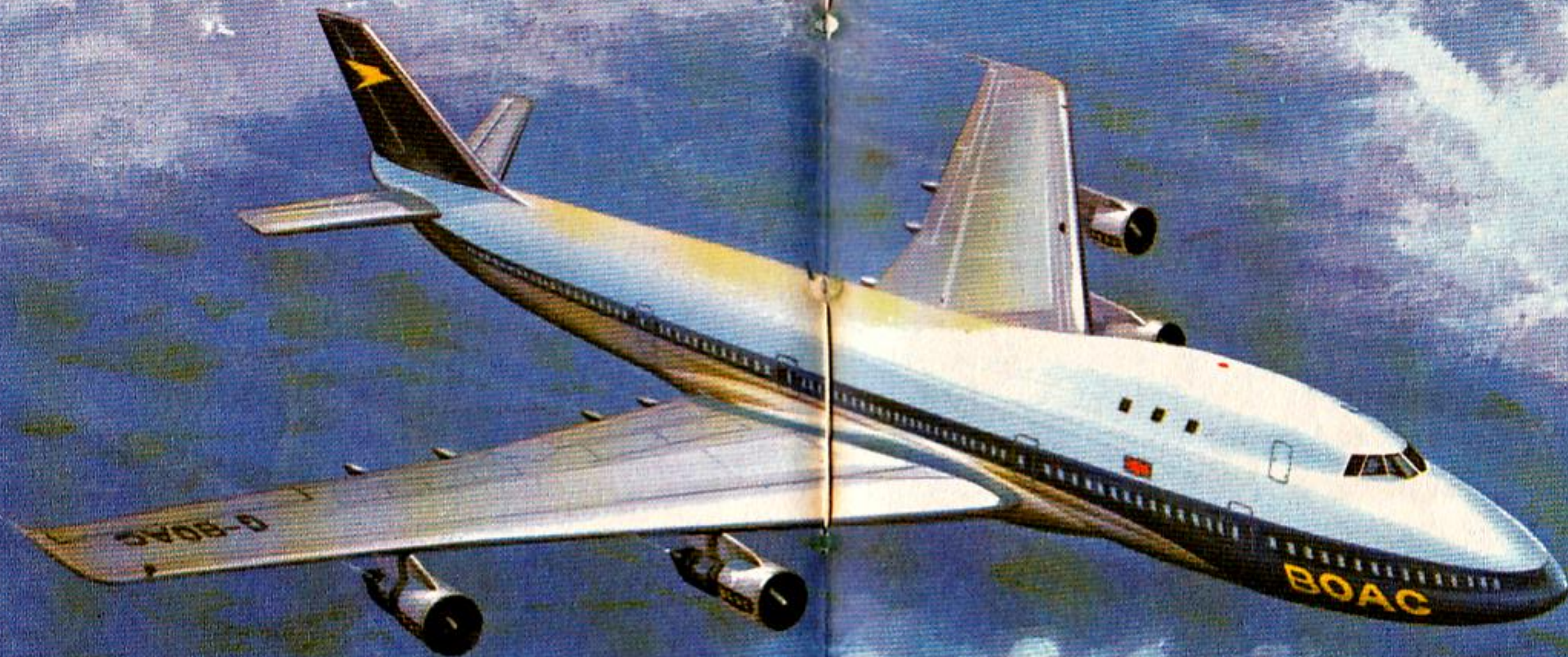
Let go and see what happens



A jet engine works something like this



## Carrying people by air



More and more people want to travel  
by air.  
Bigger and bigger aircraft are made.  
This Jumbo Jet can carry 400 people.



## Carrying goods by air



Most goods are carried by ship  
to other countries.

Here is a cargo ship.



An aircraft carries goods  
faster than a ship.

It costs more to send goods by air.



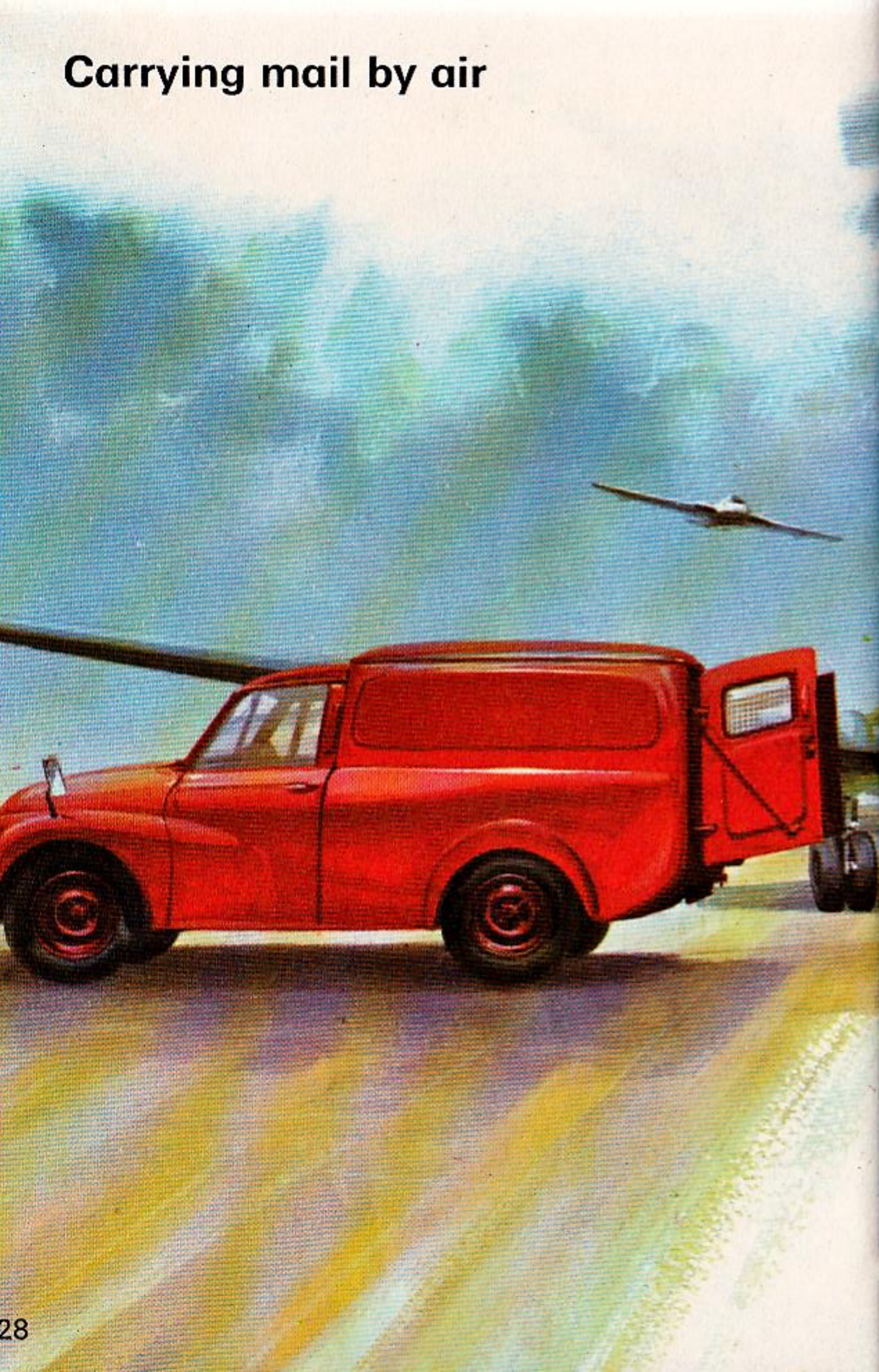
## Carrying cars by air



Some people take their cars abroad.  
Aircraft like this can carry them.



## Carrying mail by air

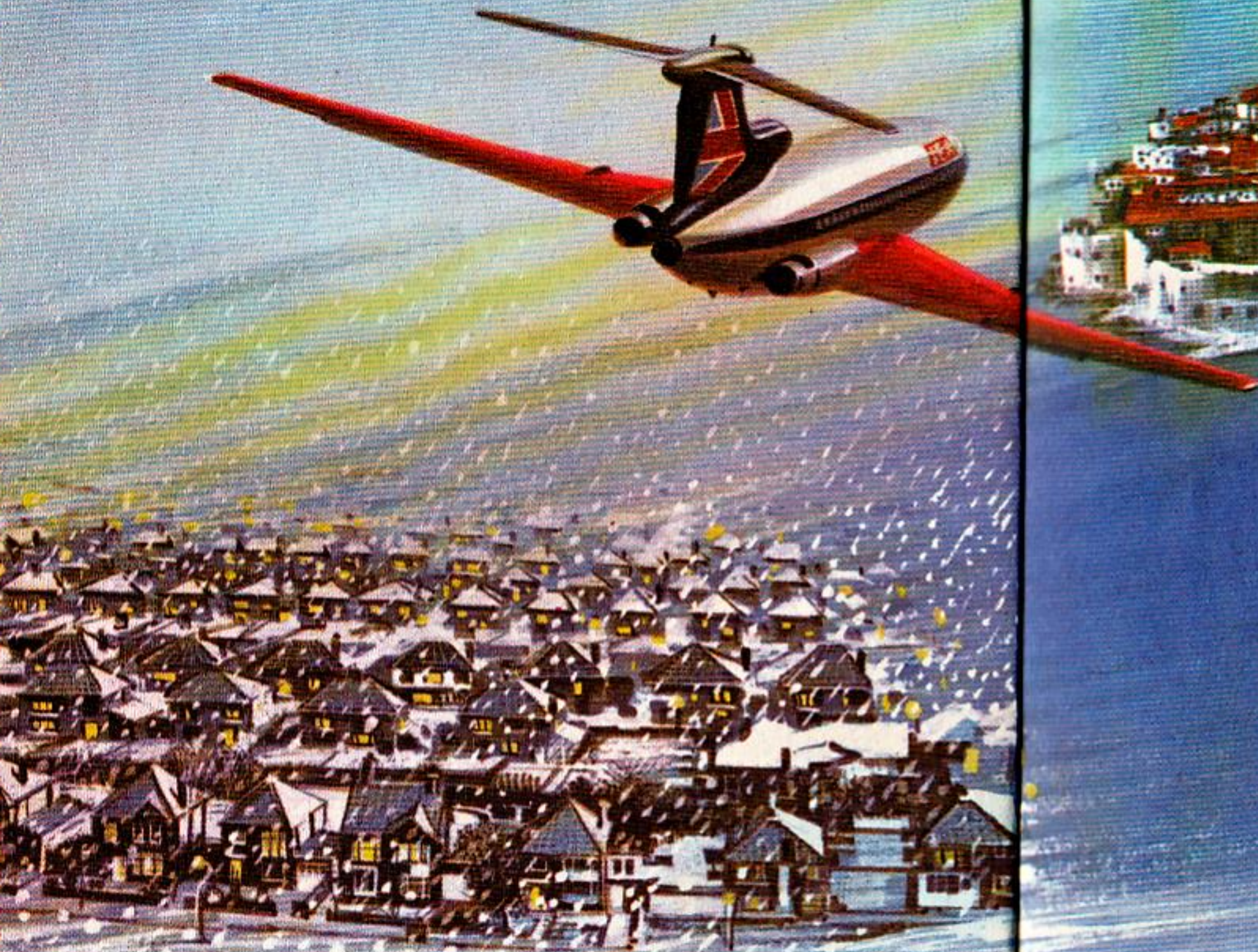


Letters can be sent much more quickly by air mail.

They can reach any city in the world in a few days.



## Holidays by air



In cold, wintry weather, people may fly to another country.



In a few hours they can be sitting in the hot sun.



## Aircraft for sowing seeds and spraying crops



Sometimes aircraft are used to sow very large fields with seed.



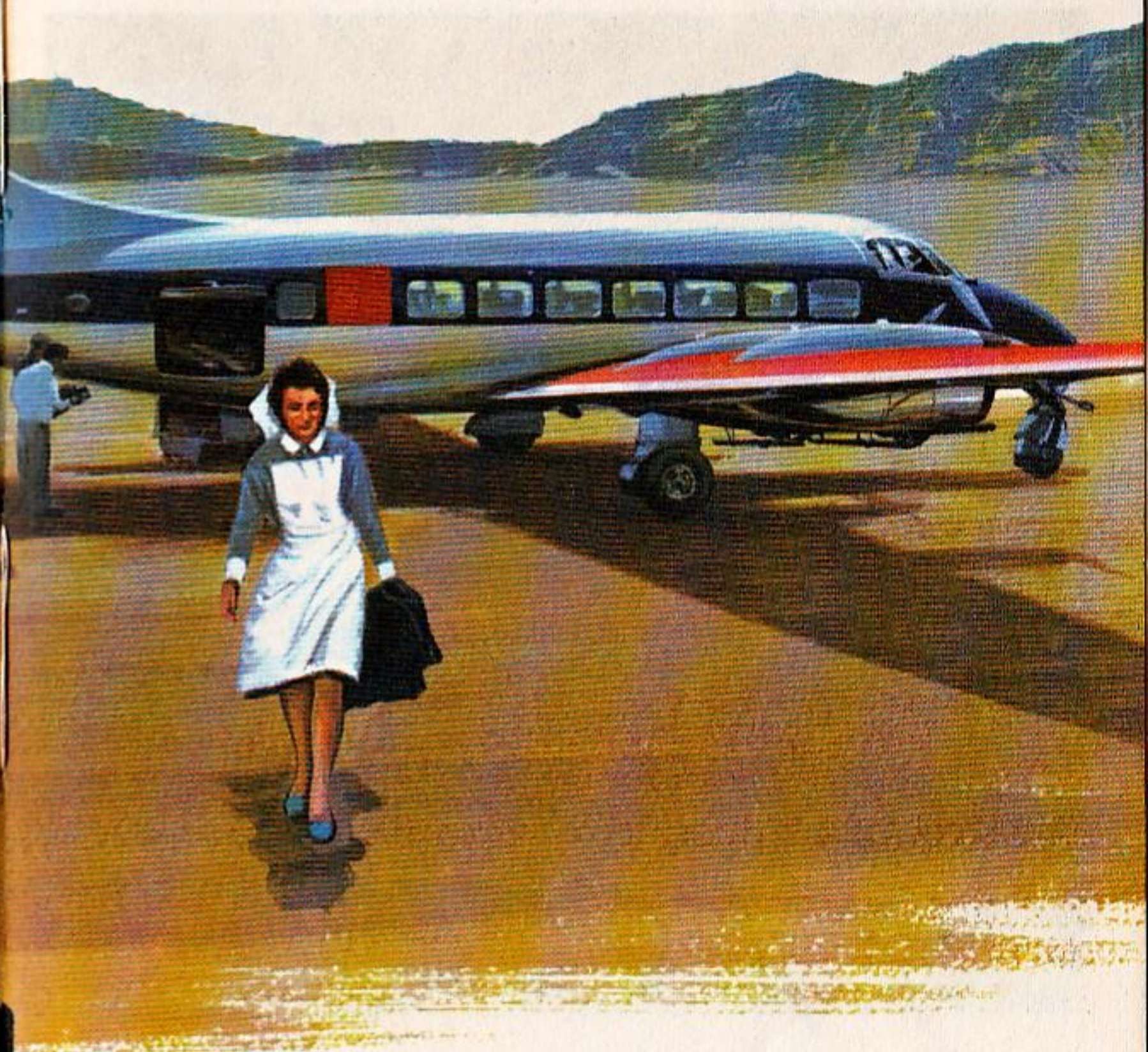
Fields can also be sprayed from the air to kill pests and weeds.



## Aircraft help to save lives



An injured man goes to hospital.



In some countries, nurses and doctors fly long distances to people who are ill.



## Sport in the air



Gliders do not have engines.  
Glider pilots use air currents to fly  
for hours at a time.

## Parachutes



Some people drop by parachute  
for sport.  
Soldiers also can drop by parachute.



# Helicopters



A helicopter can stay still in the air.  
It can save lives because of this.



A helicopter can land troops  
almost anywhere.  
It does not need a runway.



## The aircraft cockpit



Here is the cockpit of a large, modern aircraft.

There are many things in it that the pilot must watch.

## The aircraft crew



The people who fly the aircraft and look after the passengers are called the crew.



## A new type of aircraft



This aircraft can go straight up and straight down like a helicopter. It can fly faster than a helicopter.

## A very fast passenger aircraft

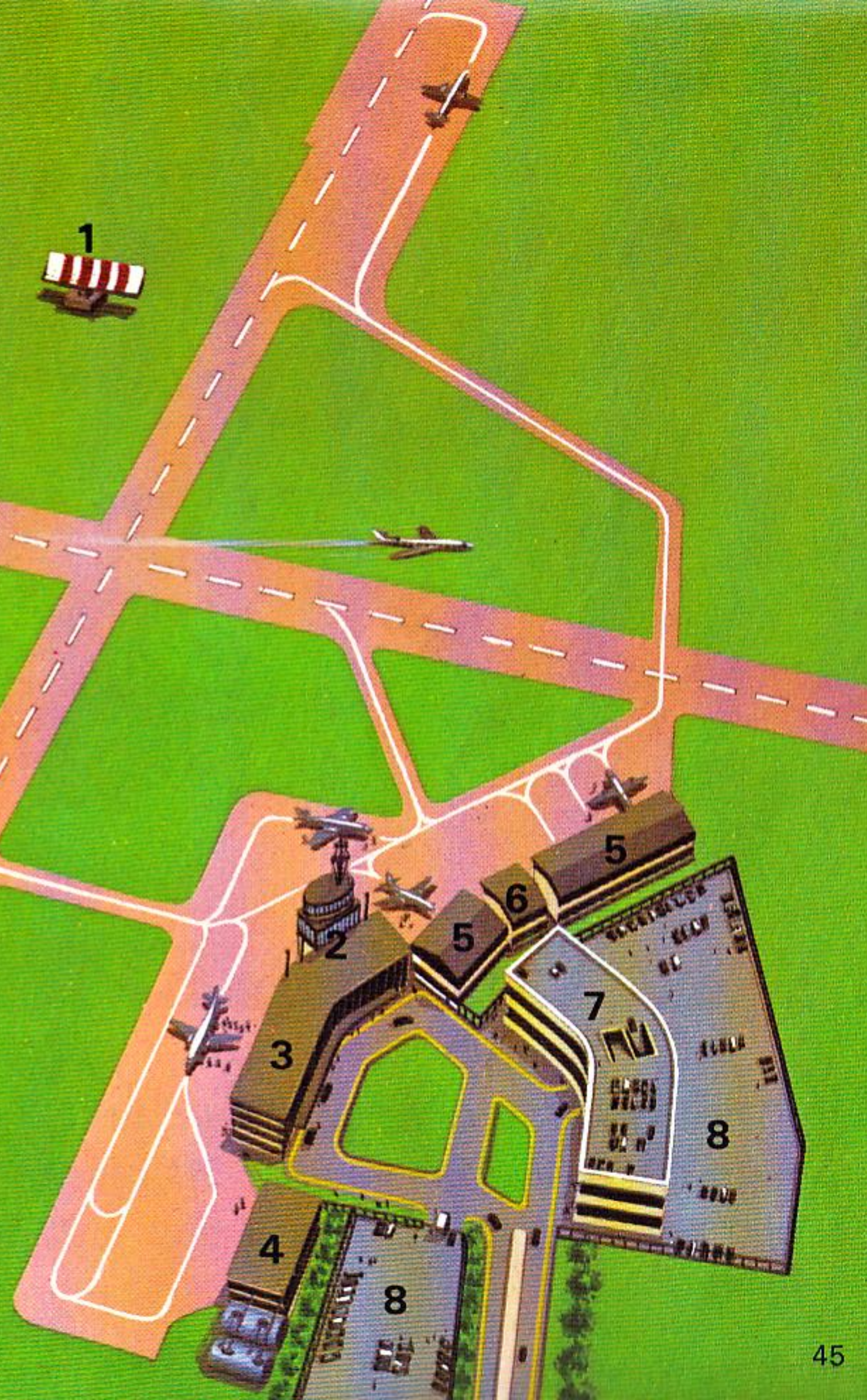


A passenger plane has been made which can fly at 1,350 miles (2 173 km) an hour.



## A modern airport

- 1 Radar scanner
- 2 Control tower
- 3 Passenger terminal
- 4 Fuel depot
- 5 Aircraft hangars
- 6 Fire Station
- 7 Multi-storey car park
- 8 Car parks



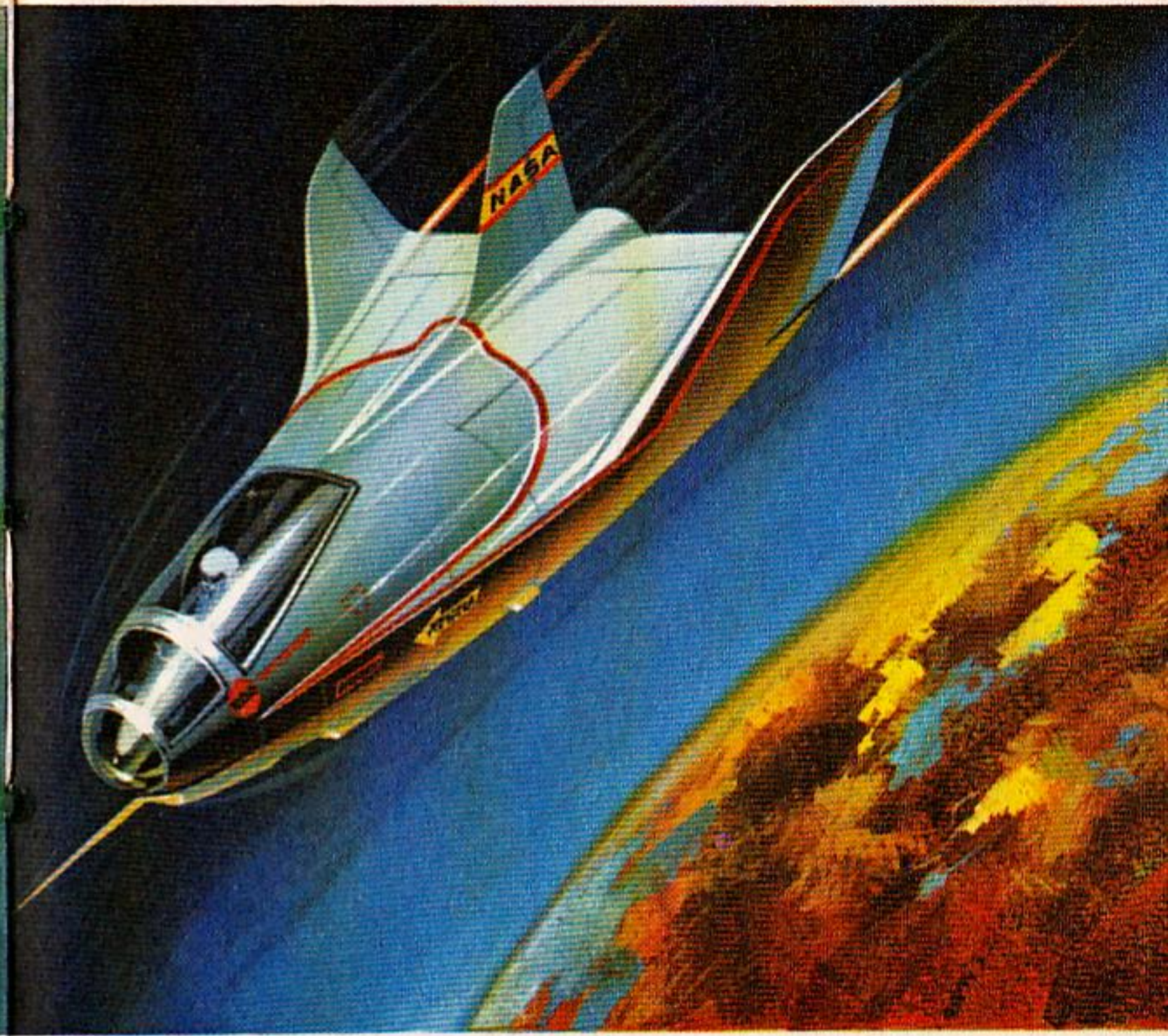


## A rocket aircraft



This rocket aircraft has flown at more than 4,500 miles (7 242 km) an hour.

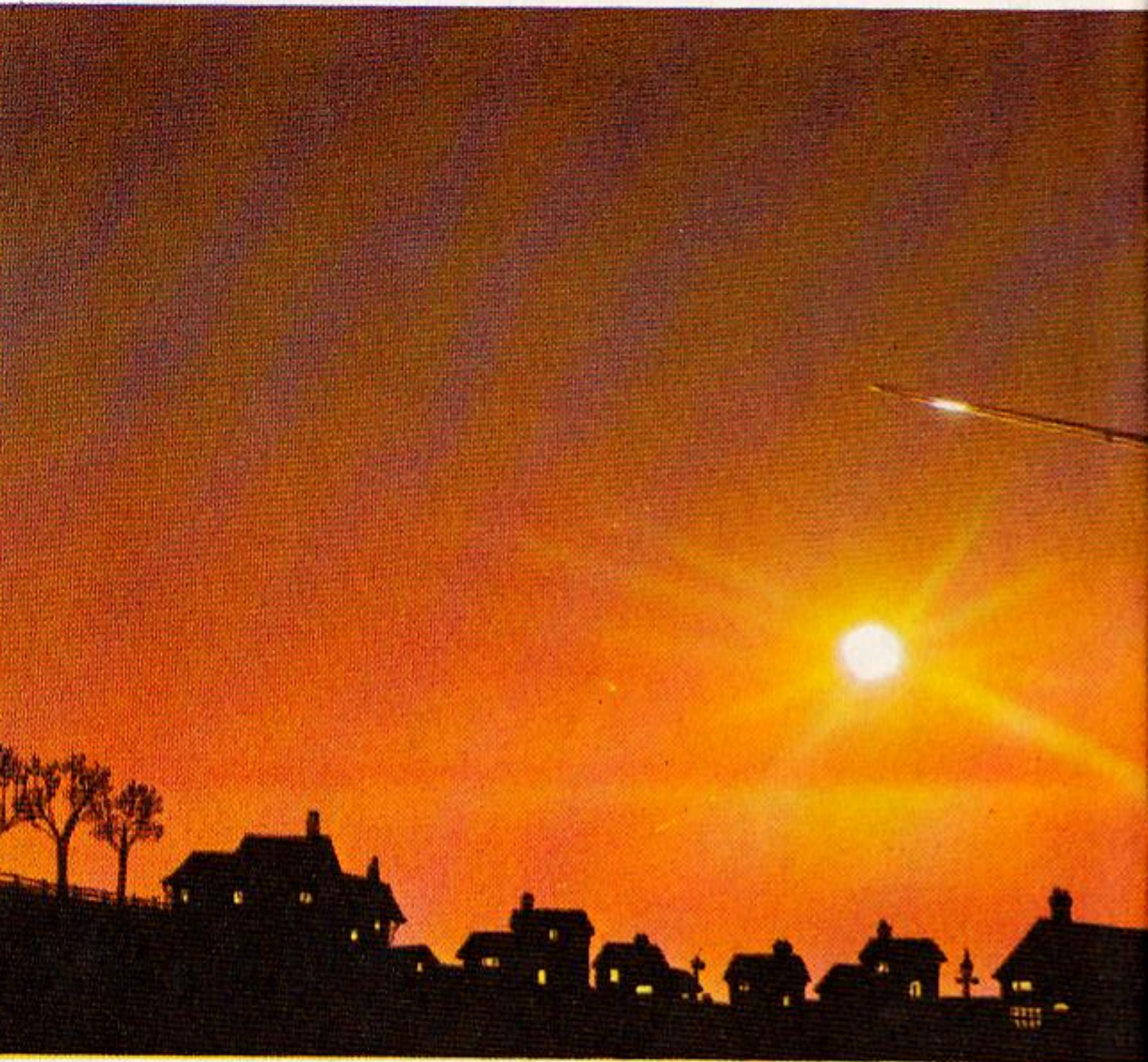
## The shape of aircraft to come ?



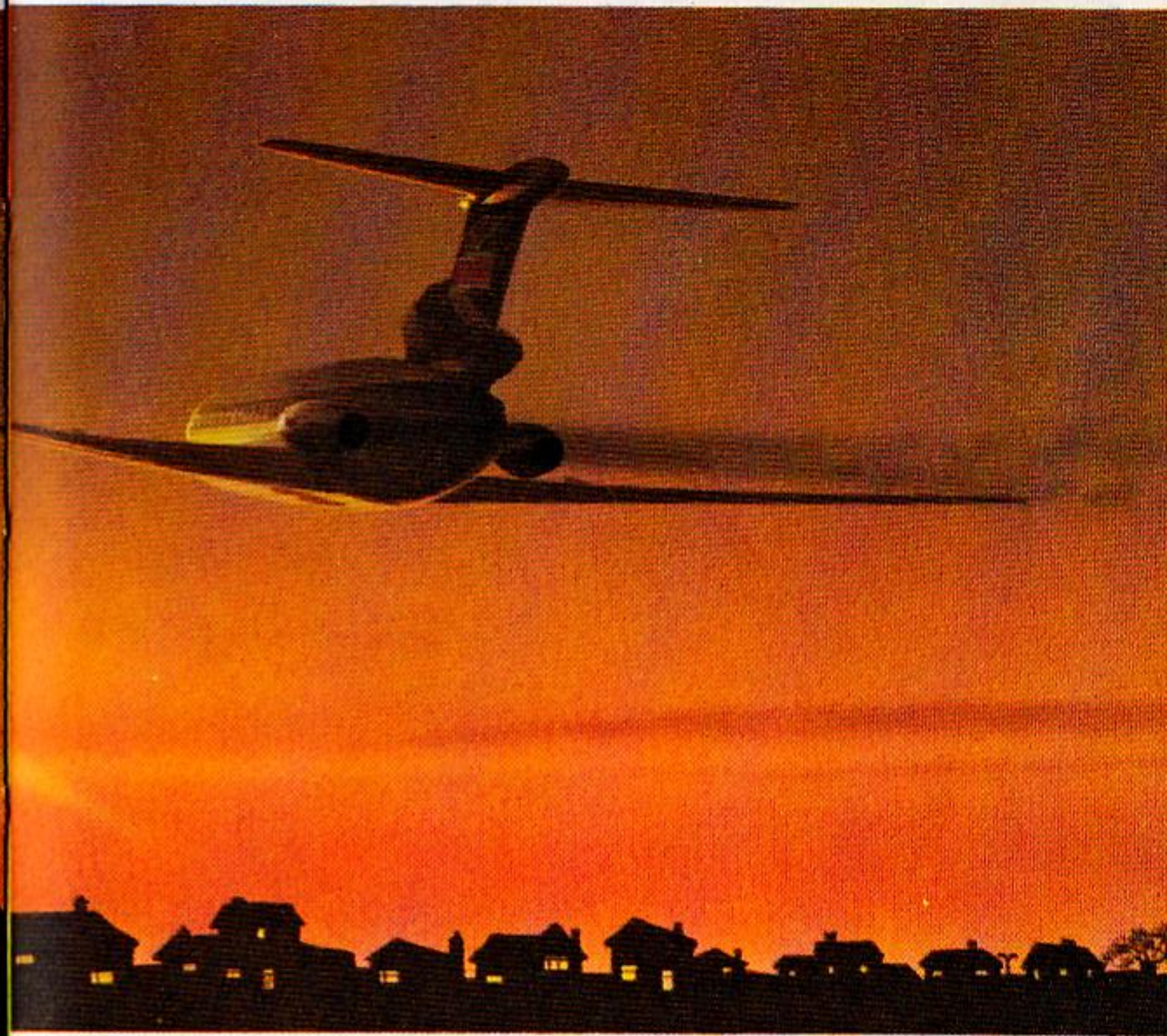
One day, aircraft like this may fly in space.  
They will have rocket engines.



## Aircraft can cause problems



The noise from aircraft can spoil people's home life.  
It can also damage buildings.



The gases from aircraft engines can spoil clean air.  
Airports need a lot of land.





'Mono' means 'one'.  
A monoplane has  
one wing.



'Bi' means 'two'.  
A biplane has two  
wings.



'Tri' means 'three'.  
A triplane had  
three wings.

A flying boat can  
land on water.



A ski plane can  
land on snow.

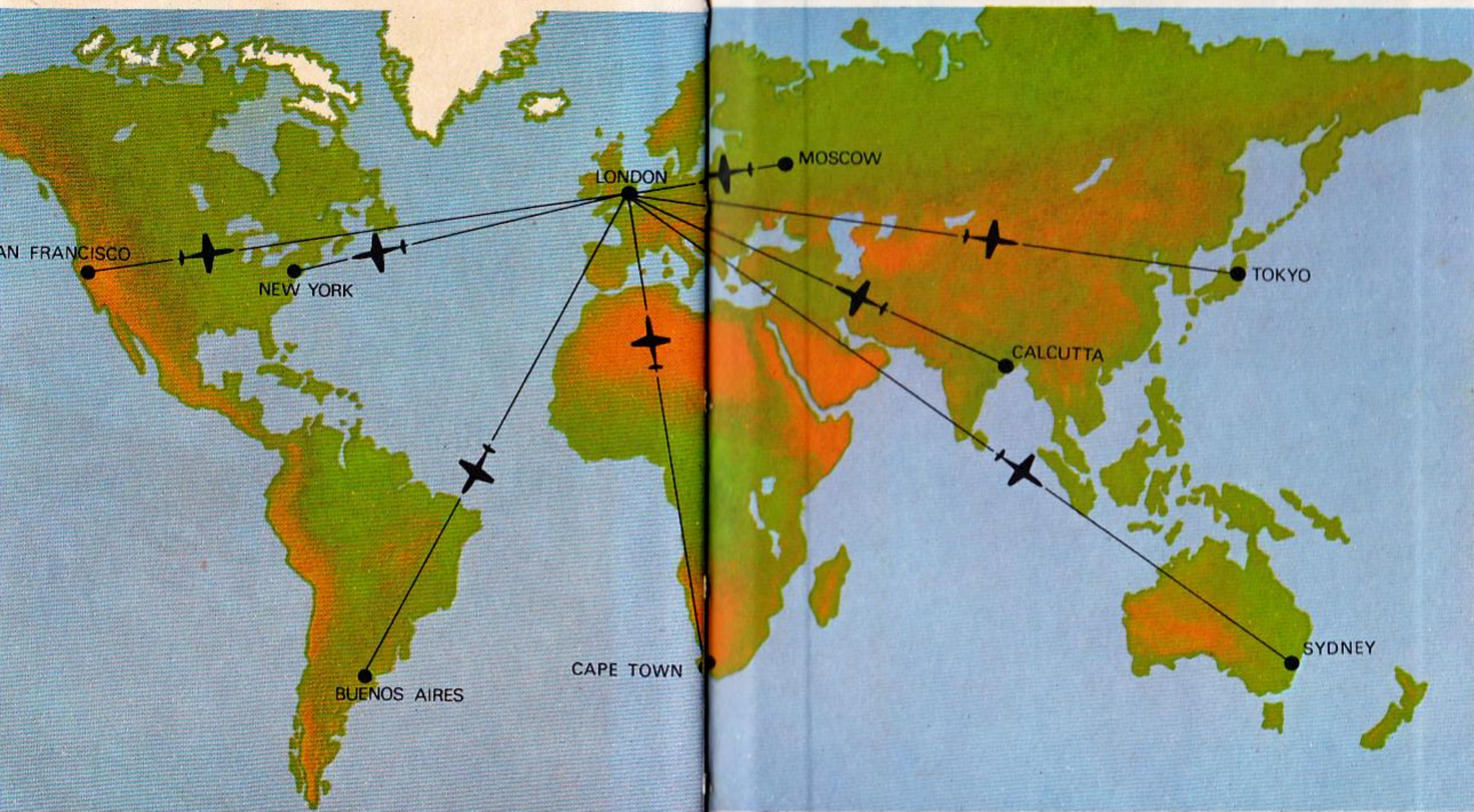


A helicopter can  
land on a building  
with a flat roof.





# Some distances by air



|                         |                         |
|-------------------------|-------------------------|
| London to New York      | 3,441 miles (5 538 km)  |
| San Francisco to London | 5,354 miles (8 616 km)  |
| London to Buenos Aires  | 6,919 miles (11 135 km) |
| Cape Town to London     | 6,010 miles (9 672 km)  |

|                    |                          |
|--------------------|--------------------------|
| London to Sydney   | 10,575 miles (17 019 km) |
| Calcutta to London | 4,962 miles (7 985 km)   |
| London to Tokyo    | 5,959 miles (9 590 km)   |
| Moscow to London   | 1,565 miles (2 519 km)   |